

IN THE CLAIMS

This listing of claims will replace all prior version, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and the applicant and/or assignee reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application.

Listing of Claims:

What is claimed is:

1. (Previously Presented) A communication system for communication using wireless signals including down-link signals to and up-link signals from mobile stations, the system comprising,
a plurality of transceiver stations having broadcast channels and dedicated channels carried by said wireless signals,
measurement means to form measurements of said wireless signals, and zone manager means including,
processor means to process said measurements to determine preferred ones of said transceiver stations for particular dedicated channels for a particular mobile station, and
control means to dynamically select said preferred ones of said transceiver stations to provide said particular dedicated channels for said particular mobile station separately from one of said transceiver stations providing particular broadcast channels for said particular mobile station.
2. (Original) The communication system of claim 1 wherein said measurement means measures said up-link signals from said particular mobile station to form said measurements.

3. (Previously Presented) The communication system of claim 2, wherein, said control means is responsive to said processed measurements for changing said dedicated channels as frequently as a signal change time determined by a frequency of said up-link signals.
4. (Previously Presented) The communication system of claim 3 wherein said signal change time is associated with an up-link signal frame rate of said up-link signals.
5. (Canceled)
6. (Previously Presented) The communication system of claim 3 wherein said signal change time is less than 1 second.
7. (Previously Presented) The communication system of claim 1, wherein said up-link signals from said particular mobile station are measurement signals occurring at a measurement signal rate of $1/T$ and wherein said processor means operates to,
generate said measurements at a rate of $1/T$,
integrate a plurality of said measurements over an integration length to form integrated measurement reports, and
form said integrated measurement reports using said processed measurements.
8. (Original) The communication system of claim 1 wherein said zone manager means is formed of a plurality of zone managers, one for each of said transceiver stations.
9. (Original) The communication system of claim 8 wherein said zone managers are co-located with said transceiver stations at macrodiverse locations.
10. (Original) The communication system of claim 9 wherein said zone managers are interconnected with each other forming a network.
11. (Original) The communication system of claim 8 wherein two or more of said zone managers are co-located at a common location.

12. (Original) The communication system of claim 11 wherein said common location is a base station controller in a cellular system.

13. (Original) The communication system of claim 8 wherein said plurality of zone managers include a host zone manager and one or more assistant zone managers, said host zone manager operative to communicate over said particular broadcast channels with said particular mobile station while said particular dedicated channels for said particular mobile station are dynamically switched among said one or more assistant zone managers and said host zone manager.

14. (Original) The communication system of claim 13 wherein said measurement means includes a plurality of measurement units, one for each of said zone managers, where each measurement unit measures up-link traffic signals from said particular mobile station to form ones of said measurements as unit measurements.

15 (Previously Presented) The communication system of claim 13, wherein, said transceiver stations include

a plurality of macro-diverse broadcasters distributed at macro-diverse broadcaster locations to broadcast said down-link signals, and

a plurality of macro-diverse collector means distributed at macro-diverse collector locations to receive said up-link signals,

said measurement means includes a plurality of measurement units, one for each of said zone managers, where each measurement unit measures up-link signals from said particular mobile station to form unit measurements representing the quality of said received up-link signals at one of said macrodiverse collector locations,

said processor means for a said host zone manager receives a plurality of said unit measurements and processes said unit measurements to determine preferred ones of said broadcasters and preferred ones of said collectors for said particular dedicated channels for said particular mobile station, and

said control means for said host zone manager dynamically selects

said particular dedicated channels for said particular mobile station by selecting said preferred ones of said broadcasters to provide particular down-link signals and

said preferred ones of said collectors to receive particular up-link signals for said particular mobile station.

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

20. (Canceled)

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Previously Presented) The communication system of claim 1, wherein said zone manager means is formed of a plurality of zone managers, one for each of said transceiver stations, each particular one of said zone managers having,
a resource manager for managing available resources in said communication system,
an airlink controller for controlling the radio channels in said communication system, and
interface means for providing interfaces to said zone managers.

26. (Previously Presented) The communication system of claim 25 wherein said interface means includes a zone manager interface for controlling links between said zone managers.

27. (Previously Presented) The communication system of claim 25, wherein said interface means includes a transceiver interface for controlling a link between zone manager and corresponding transceiver station.
28. (Previously Presented) The communication system of claim 25, wherein said communication system includes a controller link providing an interface between a base station controller and some subset of said transceiver stations and said zone managers.
29. (Canceled)
30. (Original) The communication system of claim 25 wherein one or more of said zone managers is integrated into one or more of said transceiver stations.
31. (Previously Presented) The communication system of claim 1, wherein said control means includes
broadcaster commands for controlling the down-link signals to each of selected ones of said mobile stations, and
collector commands for controlling the plurality of macro-diverse collectors for changing the up-link signals for each of other selected ones of said mobile stations.
32. (Original) The communication system of claim 1 wherein said wireless signals employ multiple access protocols.
33. (Previously Presented) The communication system of claim 32, wherein said multiple access protocols include at least some subset of TDMA, CDMA, SDMA, and FDMA.
34. (Canceled)
35. (Canceled)
36. (Canceled)

37. (Original) The communication system of claim 1 wherein said transceiver stations communicate over a region containing one or more zones and said measurement means includes measurements from one or more collectors in said transceiver stations.

38. (Original) The communication system of claim 37 wherein said measurements from one or more collectors include radio link conditions between a mobile station and said one or more collectors.

39. (Previously Presented) The communication system of claim 38, wherein said radio link conditions include at least some subset of path loss, forward error rates, and carrier to interference ratio.

40. (Canceled)

41. (Canceled)

42. (Previously Presented) The communication system of claim 37, wherein said measurements from one or more collectors are processed in the zone manager means related to said one or more transceiver stations.

43. (Original) The communication system of claim 1 wherein said zone manager means includes a host zone manager and one or more assistant zone managers and said host zone manager processes said measurements from the one or more assistant zone manager means to provide processed measurements.

44. (Canceled)

45. (Previously Presented) The communication system of claim 43, wherein said processed measurements include at least some subset of priority levels for the communication links with mobiles, timing and synchronization information, transmit power level, and locations of mobile stations.

46. (Canceled)

47. (Canceled)

48. (Canceled)

49. (Original) The communication system of claim 1 wherein said transceiver stations include broadcaster controllers for controlling broadcaster transmitters and said broadcaster controller selects one or more broadcaster transmitters for forward communications with mobile stations based on said processor information.

50. (Previously Presented) A method for communicating using wireless signals including down-link signals to and up-link signals from mobile stations, the method comprising, transmitting, from a plurality of transceiver stations, broadcast channels and dedicated channels over said wireless signals, forming measurements of said wireless signals with measurement means, processing, with processor means, said measurements to determine preferred ones of said transceiver stations for particular dedicated channels for a particular mobile station, and dynamically selecting, with control means, said preferred ones of said transceiver stations to provide said particular dedicated channels for said particular mobile station separately from one of said transceiver stations providing particular broadcast channels for said particular mobile station.

51. (Previously Presented) The method of claim 50, further comprising measuring said up-link signals from said particular mobile station to form said measurements.

52. (Previously Presented) The method of claim 50, further comprising changing said dedicated channels as frequently as a signal change time determined by a frequency of said up-link signals.

53. (Previously Presented) The method of claim 52, wherein said change time is associated with an up-link signal frame rate of said up-link signals.

54. (Canceled)

55. (Canceled)

56. (Previously Presented) The method of claim 50 wherein said up-link signals from said particular mobile station are measurement signals occurring at a measurement signal rate of $1/T$ and wherein said processing operates, to generate said measurements at a rate of $1/T$, to integrating a plurality of said measurements over an integration length to form integrated measurement reports, to form said integrated measurement reports using said processor information.

57. (Original) A communication system for providing wireless communications with mobile devices, the system comprising:

a plurality of transceiver stations to communicate with mobile devices, wherein the plurality of transceiver stations communicate via broadcast channels and dedicated channels, wherein one of the plurality of transceiver stations having best radio access to a first mobile device will be designated a host transceiver station for the first mobile device, and wherein the host transceiver will provide the broadcast channels for communication with the first mobile device; and

a plurality of processors associated with said plurality of transceivers to manage communications, wherein one of the plurality of processors associated with the host transceiver station will be a host zone manager for the first mobile device, wherein the host processor is capable of dynamically selecting one or more of the plurality of transceiver stations to provide the dedicated channels for communications with the first mobile device based on signal measurements, wherein the dynamic selection does not affect the host transceiver providing the broadcast channels.

58. (Original) The system of claim 57, wherein the signal measurements are measurements of up-link signals from the first mobile device.

59. (Original) The system of claim 57, wherein said host processor receives signal measurements from at least some subset of said plurality of processors, wherein the signal measurements are measurements of up-link signals from the first mobile station;

processes the signal measurement received; and
dynamically selects, based on the processed signal measurements, the one or more of said plurality of transceivers and the associated processors to provide the dedicated channels for the first mobile device.

60. (Original) The system of claim 59, wherein said host processor also instructs the one or more of said plurality of transceivers and the associated processors that they are providing the dedicated channels for the first mobile device.

61. (Original) The system of claim 57, wherein said plurality of processors are connected together.

62. (Original) The system of claim 58, wherein said processor may dynamically change the transceiver station providing the dedicated channels as frequently as frequency of the up-link signals.

63. (Original) The system of claim 57, wherein a first set of transceivers can provide uplink communications and a second set of transceivers can provide downlink communications.

64. (Original) The system of claim 57, wherein a first set of transceivers can provide traffic signals and a second set of transceivers can provide control signals.

65. (Original) A processor for use in a communication system for providing wireless communications with mobile stations, the processor comprising:

a transceiver interface to receive signals from an associated transceiver and to provide instructions to the associated transceiver, wherein the signals received from the associated transceiver include uplink signals from mobile devices;

a controller interface to communicate with a controller, wherein the communications with the controller include assignment of a host transceiver and host processor for a particular mobile device, wherein the host transceiver and host processor communicates with the particular mobile device via broadcast channels;

a processor interface to communicate with a plurality of other processors, wherein the communications related to the particular mobile device include receipt of measurement signals

related to the particular mobile station and transmission of instructions if said processor is the host processor, and includes receipt of instructions from a host processor and transmission of measurement signals associated with the particular mobile station to the host processor if said processor is not the host processor;

a signal processor, active for the particular mobile device when said processor is the host processor, to process the measurement signals received from at least some subset of the plurality of other processors and the measurement signal from said processor; and

a selector to dynamically select an assistant processor and associated assistant transceiver to provide communications with the particular mobile device via dedicated channels based on the processed measurement signals.

66. (Original) The processor of claim 65, wherein the measurement signals are measurements of up-link signals from the particular mobile device.

67. (Original) The processor of claim 65, wherein said selector may dynamically select as frequently as frequency of the up-link signals.

68. (Original) The processor of claim 65, wherein said processor may be the host processor for a first mobile device and an assistant processor for a second mobile device.

69. (Original) The processor of claim 65, wherein said processor interface for a host processor transmits instructions to an assistant processor to provide the dedicated channels for communication with the particular mobile device when said selector selects the associated assistant transceiver to provide communications with the particular mobile device via the dedicated channels.

70. (Original) The processor of claim 65, wherein said processor interface for an assistant processor receives instructions from a host processor to provide the dedicated channels for communication with the particular mobile device when the host processor selects the associated assistant transceiver to communicate with the particular mobile device via the dedicated channels.

71. (Original) The processor of claim 65, further comprising a resource manager for controlling radio frequencies of associated transceiver.
72. (Original) The processor of claim 65, wherein said host processor can select a first set of transceivers to provide uplink communications and a second set of transceivers to provide downlink communications.
73. (Original) The processor of claim 65, wherein said host processor can select a first set of transceivers can provide traffic signals and a second set of transceivers can provide control signals.
74. (Original) A communication system capable of using wireless down-link signals to and wireless up-link signals from mobile stations, comprising:
a plurality of transceivers having broadcast channels and dedicated channels carried by said wireless signals;
preferred ones of said transceivers to provide particular dedicated channels for a particular mobile station separately from one of said transceivers to provide particular broadcast channels for said particular mobile stations.
75. (Original) The communication system of claim 74, wherein at least some of said transceivers are responsive to a selection of preferred ones of said transceivers to provide said particular dedicated channels for said particular mobile station separately from said one of said transceivers to provide particular broadcast channels for said particular mobile station.
76. (Original) The communication system of claim 75, wherein at least some of said transceivers are a component of a zone manager.
77. (Original) The communication system of claim 76, wherein said zone manager is capable of determining said preferred ones of said transceivers.
78. (Original) The communication system of claim 76, wherein said zone manager is capable of selecting said preferred ones of said transceivers.

79. (Original) The communication system of claim 78, wherein said zone manager is capable of dynamically selecting said preferred ones of said transceivers.

80. (Original) The communication system of claim 75, wherein said at least some of said transceivers are further responsive to a dynamic selection of said preferred ones of said transceivers.

81. (Original) The communication system of claim 75, wherein said at least some of said transceivers are a component of a transceiver station.

82. (Original) The communication system of claim of claim 81, wherein said transceiver station is capable of determining said preferred ones of said transceivers.

83. (Original) The communication system of claim 81, wherein said transceiver station is capable of selecting said preferred ones of said transceivers.

84. (Original) The communication system of claim 83, wherein said transceiver is capable of dynamically selecting said preferred ones of said transceivers.

85. (Original) A method of operating a communication system using wireless down-link signals to and wireless up-link signals from mobile stations, comprising:

determining preferred ones of transceivers to provide particular dedicated channels for a particular mobile station separately from one of said transceivers to provide particular broadcast channels for said particular mobile station.

86. (Original) The method of claim 85, and further comprising:

selecting said preferred ones of said transceivers to provide particular dedicated channels for a particular mobile station separately from said one of said transceivers to provide particular broadcast channels for said particular mobile station.

87. (Original) The method of claim 86, wherein said communication system includes at least one zone manager.

88. (Original) The method of claim 87, wherein said determining is performed by said zone manager at least in part.
89. (Original) The method of claim 88, wherein said selecting is performed by said zone manager at least in part.
90. (Original) The method of claim 86, wherein said selecting comprises: dynamically selecting said preferred ones of said transceivers to provide particular dedicated channels for a particular mobile station separately from said one of said transceivers to provide particular broadcast channels for said particular mobile station.
91. (Original) The method of claim 90, wherein said communication system includes zone managers that perform said dynamic selecting at least in part.
92. (Original) An apparatus for use in a communication system using wireless down-link signals to and wireless up-link signals from mobile stations comprising:
a processor, said processor adapted to determine preferred ones of transceivers to provide particular dedicated channels for a particular mobile station separately from one of said transceivers to provide particular broadcast channels for said particular mobile station.
93. (Original) The apparatus of claim 92, wherein said processor is further adapted to select said preferred ones of said transceivers to provide particular dedicated channels for a particular mobile station separately from said one of said transceivers to provide particular broadcast channels for said particular mobile station.
94. (Original) The apparatus of claim 93, wherein said processor is further adapted to dynamically select said preferred ones of said transceivers to provide particular dedicated channels for a particular mobile station separately from said one of said transceivers to provide particular broadcast channels for said particular mobile station.